

CLAIMS

What is claimed is:

- 1 1. A processor, comprising:
2 a fork predictor to issue a prediction whether a fork instruction
3 should be permitted to execute; and
4 an execution unit to execute said fork instruction responsive to
5 said prediction.

- 1 2. The processor of claim 1, wherein said fork predictor
2 includes a prediction logic to issue said prediction based upon
3 execution history of speculative threads.

- 1 3. The processor of claim 2, wherein said prediction logic
2 utilizes local history of said speculative threads.

- 1 4. The processor of claim 2, wherein said prediction logic
2 utilizes global history of said speculative threads.

- 1 5. The processor of claim 2, wherein said fork predictor
2 includes an update logic to receive a first calculated determination
3 whether a first one of said speculative threads was executed desirably.

- 1 6. The processor of claim 5, further comprising a retirement
2 unit to transfer said first calculated determination to said update logic.

1 7. The processor of claim 5, wherein said update logic is to
2 receive a second calculated determination whether a second one of said
3 speculative threads would have been executed desirably when said
4 second one of said speculative threads was not executed.

1 8. The processor of claim 5, wherein said first calculated
2 determination is performed by executing an update instruction.

1 9. The processor of claim 8, wherein said update instruction is
2 part of a join instruction.

1 10. A method, comprising:
2 predicting whether a speculative thread will be desirable;
3 conditionally forking to initiate said speculative thread responsive
4 to said predicting;
5 determining whether said speculative thread was desirable; and
6 updating state performing said predicting with results of said
7 determining.

1 11. The method of claim 10, further comprising testing whether
2 a processor supports said conditional forking.

1 12. The method of claim 10, further comprising joining said
2 speculative thread and a master thread when said speculative thread
3 and said master thread are both complete.

1 13. The method of claim 12, wherein said joining is performed
2 with said updating.

1 14. The method of claim 10, wherein said determining includes
2 determining whether a non-executed speculative thread would have
3 been desirable.

1 15. The method of claim 10, wherein said results include a
2 local history information.

1 16. The method of claim 10, wherein said results include a
2 global history information.

1 17. The method of claim 10, further comprising initiating a
2 recovery if said determining shows that said speculative execution was
3 not successful.

1 18. A system, comprising:
2 a processor including a fork predictor to issue a prediction
3 whether a fork instruction should be permitted to execute and an
4 execution unit to execute said fork instruction responsive to said
5 prediction;
6 a chipset coupled to said processor to convey input-output data
7 from an input-output peripheral; and
8 an input-output peripheral including an audio input-output
9 device.

1 19. The system of claim 18, wherein said fork predictor
2 includes a prediction logic to issue said prediction based upon
3 execution history of speculative threads.

1 20. The system of claim 19, wherein said prediction logic
2 utilizes local history of said speculative threads.

1 21. The system of claim 19, wherein said prediction logic
2 utilizes global history of said speculative threads.

1 22. The system of claim 19, wherein said fork predictor
2 includes an update logic to receive a first calculated determination
3 whether a first one of said speculative threads was executed desirably.

1 23. The system of claim 22, further comprising a retirement
2 unit to transfer said first calculated determination to said update logic.

1 24. The system of claim 22, wherein said update logic is to
2 receive a second calculated determination whether a second one of said
3 speculative threads would have been executed desirably when said
4 second one of said speculative threads was not executed.

1 25. The system of claim 22, wherein said first calculated
2 determination is performed by executing an update instruction.

1 26. The system of claim 25, wherein said update instruction is
2 part of a join instruction.

1 27. A processor, comprising:
2 means for predicting whether a speculative thread will be
3 desirable;
4 means for conditionally forking to initiate said speculative thread
5 responsive to said predicting;
6 means for determining whether said speculative thread was
7 desirable; and
8 means for updating state performing said predicting with results
9 of said determining.

1 28. The processor of claim 27, further comprising means for
2 testing whether a processor supports said conditional forking.

1 29. The processor of claim 27, further comprising means for
2 joining said speculative thread and a master thread when said
3 speculative thread and said master thread are both complete.

1 30. The processor of claim 29, wherein said means for joining is
2 included in said means for updating.

1 31. The processor of claim 27, wherein said means for
2 determining includes means for determining whether a non-executed
3 speculative thread would have been desirable.